DOCUMENT RESUME

ED 299 443 CE 051 080

AUTHOR Wolfbein, Seymour L.
TITLE America's Service Economy.
INSTITUTION Philadelphia Jewish Employment and Vocational Service, PA. Vocational Research Inst.
PUB DATE 88
NOTE 17p.
PUB TYPE Reports - Research/Technical (143) -- Collected Works - Serials (022)
JOURNAL CIT VRI Monograph; v1 n4 1988

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Demand Occupations; Economic Climate; *Employment Patterns; *Employment Projections; Employment Statistics; *Labor Market; *Salary Wage Differentials; *Service Occupations; Trend Analysis

ABSTRACT

Every one of the 20 fastest-growing occupations, as listed by the U.S. Bureau of Labor Statistics, is in the service sector. Nearly all of the 15 million jobs that have been created since the November trough of the 1982 recession have been in the service sector. About half of these jobs pay at least $10 per hour, and those paying minimum wage or less have declined by about 25 percent. The biggest increases granted under collective bargaining for 1987 as a whole and the first quarter of 1988 occurred in the services industry. Employment in the goods-producing sector rose during 26 of the past 40 years and fell during 14. In the service sector, however, employment rose during 39 of the past 40 years. Ninety-seven percent of the increase in employment between 1947 and 1987 took place in the service sector, and projections call for this trend to continue at least into the beginning of the next century. In the years between 1982 and 1987, the increase in employment in trade-related occupations has amounted to 20 percent. In finance, insurance, and real estate the increase has amounted to 23 percent. It should be noted that this increase in service sector employment levels coincided with the decline of the U.S. manufacturing sector, a period of peacetime prosperity, and significant increases in female labor force participation. (MN)

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ED299443

Volume 1 Number 4
1988

VRI VOCATIONAL RESEARCH INSTITUTE

MONOGRAPH

AMERICA'S SERVICE ECONOMY

by

Dr. Seymour L. Wolfbein

U.S. DEPARTMENT OF EDUCATION
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DR. SEYMOUR L. WOLFBEIN spent the first 25 years of his working life in the Federal service in Washington, DC, most of it in the U.S. Department of Labor where he rose through the ranks to become Deputy Assistant Secretary of Labor. He also was the first Manpower Administrator under President Kennedy; during this time he developed and headed the system which collects and analyzes employment and unemployment conditions in the USA. For 40 months in a row, Dr. Wolfbein conducted the monthly national press conference on employment and unemployment before the media.

In the mid-1950s, Dr. Wolfbein published two landmark papers in which he predicted the shift in the American economy from goods to service producing sectors, and the emergence of the South and Southwest as the areas of greatest economic development. He twice received the Department's Distinguished Award.

In 1967, Dr. Wolfbein became Dean of the School of Business Administration at Temple University, serving 12 years in that position. During that time the School's faculty increased from 60 to 210, was listed in the top ten in graduate work in economics and introduced curricula in Computer and Information Science and Health Administration.

Dr. Wolfbein has lectured in 33 countries for the U.S. Department of State and the USIA, has been the U.S. Delegate to various international meetings in Geneva, Lisbon, Paris, Athens and Rome, helped establish and was Dean of Temple University's Campus in Japan and was Dean of Faculties at the Salzburg Seminar in American Studies in Salzburg, Austria.

Dr. Wolfbein's doctorate is from Columbia University. The University has awarded him a medal in Economics and an Alumni Award of Honor. He is an elected Fellow of the American Statistical Association and the American Association for the Advancement of Science, and is the author of eight books and over 100 articles in professional and technical journals.

Today Dr. Wolfbein is president of his own management consulting firm, and while he has worked with many of the Fortune 500 companies, he is also concentrating on the relatively smaller and medium size establishments where he thinks a good deal of the action will be until at least the year 2000. Dr. Wolfbein's expertise has made him a popular lecturer, and he appears before a wide variety of educational, management and related meetings both here and abroad.

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AMERICA'S SERVICE ECONOMY

I. One of the standard dictionaries of the English language (and by no means the most encyclopedic) lists 31 different definitions and meanings under the word "service", illustrating its uses as a verb, both transitive and intransitive, and as an adjective. The list runs the gamut from a set of dishes (service for eight) to putting a ball in play (tennis) to certain rituals (marriage service) to acting in some official capacity (diplomatic service).

The one that seemed the most apt for our purposes defines service as "Supplying aids or services rather than product or goods".

Without belaboring the point that this uses the word service to define the word service, we move on to indicate that as often happens in different disciplines, words can take on specific technical meanings not in common or lay usage and can, therefore, also be confusing.

1. Thus, a distinction is made between goods producing and service producing industries in the economist's lexicon of production and employment:

   - Included in the goods producing sector of the economy are those establishments which produce some tangible good. Those establishments are aggregated into four major industry divisions as shown in Table 1/Chart 1: Agriculture; Mining; Construction; and Manufacturing, which yield a bushel of wheat, a ton of coal, a house, an ingot of steel and the seemingly limitless cornucopia of other objects that other producers and consumers need and use.

   - Included in the service producing sector of the economy are those establishments the essence of whose activities are the intangibles which can't necessarily be tasted or touched: Educating, computing, diagnosing ailments, financing loans, providing legal aid, and again the seemingly limitless cornucopia of help that producers and consumers need and use. Table 1/Chart 1 shows the five major industry divisions into which these establishments are classified: Transportation and Public Utilities; Trade; Finance, and Real Estate; Services; and Government.

2. It will be noted that we now have another use of the word service. Within the service producing sector is a major industry division called the Services industry. As will be shown a little later on, not only has the service producing sector been the major arena of employment growth over the past generation, one of its major industry divisions, to wit, the Services industry, has just emerged as the largest employer of all among all the major industry divisions whether they be goods or service producing.

3. Adding to the semantics is the word for a group of workers in the Service Occupations. Here the term "service" describes what one does on the job and which can be performed in any industry or even at a household, e.g., cooks, laundry workers, as well as the entire protective service group including police, firefighters, guards and a big range of miscellaneous jobs running from bartenders to janitors to elevator operators to beauticians.

II. To help avoid the confusion that may come with the use of these words, the materials presented will include concrete examples of what is being portrayed and analyzed. The following should also help and also move us along in presenting and assessing what has happened and is expected to happen to the industrial scene in the USA.

1. It is rare indeed to make any presentation which shows the enormous gains in the service producing sector with practically no movement on the goods side without getting feedback of a good deal of uneasiness, of wariness, of questions which practically border on the ethical if not moral about what is happening to us as a nation which concentrates more and more of its hands, skills, talents, and indeed its very economy in one basket.

   - It may be helpful to point out that, in the beginning, it was true that everybody worked in the goods producing sector which, after all, does provide for survival in the form of food, clothing and shelter. Very soon thereafter, however, people did start moving over into the service producing side, particulary into religion, education and the like, and it hasn't been a race since. In effect, what has happened is that advancing knowledge and technology have permitted us to produce the goods with fewer workers, releasing larger and larger proportions of the labor force from the farms, mills, mines and factories to provide what we want in health, education, the arts and all the rest.

2. It should also be noted that the scorecard that is kept on the trends among these two economic sectors is in terms of employment, an obviously critical indicator which involves jobs, income, purchasing power and standards of living. It should not, however, mask the fact that the goods producing sector does keep putting out more and more, on and off the farm. It is known in the trade as a "high value" sector and even with diminishing employment proportions, keeps making up about one-fourth of our total gross national product.

3. Tracing the divergent employment pathways of the goods and service producing sectors does afford needed perception about how we are faring economically. It does not, however, pit one sector against the other. Hopefully, it will be obvious that the two are inextricably interwined and fundamentally dependent on each other. For example, Trade (buying and selling-shopping malls, department stores) is one of the fastest growing major industry divisions, but there is not much it can sell without the goods, things, products that the other side makes. Yet, it is just as true that the goods produced are not to too much avail unless they get to the place where and when people buy.

- Another important aspect of this point was recently made as follows:

"The vitality of the producer services sector highlights the particular

meaning and impact of the service economy. Services do not displace manufacturing... Rather services add value to the manufacturing base as goods production becomes more complex. The rise of business services means that manufacturing establishments increasingly purchase printing, computing, information, temporary help, legal, credit collection, consulting, accounting, services to produce their final product. The growing productivity of manufacturing depends on the quality of the business services it purchases, and business services become indirectly productive to the manufacturing sector,.. each shapes the development of the other". [1]

4. Finally, the confusion between service occupations and the Services industry or the service producing sector is apparently responsible for much of the ado about the latter being heavily represented by low skilled, low paid workers.

   - The opposite is actually the case. The occupational structure in the services producing sector (and its constituent major industry divisions including the Services industry) is quite different from the goods producing sector in having a much higher proportion of managerial, professional, technical and related personnel. As the study just quoted found: "...the shift to services and the emergence of business services, tend to upgrade the occupational structure of the economy...In 1980, almost half of the workers in manufacturing occupied operator and laborer jobs while only seven percent of workers in service jobs had such jobs. Similarly, managers were about 45% of all workers in the service sector and only about 15% in manufacturing".[2] Later on we will cite similar points in a National Science Foundation study concerning scientists and engineers.

     - Since most of the job growth between now and the year 2000 will be in the service producing sector, it is important to note that every one of the 20 occupations listed by the U.S. Bureau of Labor Statistics as the fastest growing job fields between 1986 and the end of the century are on the service side. Of the 20, 12 are in the health field and 6 in the computer arena. The other two include interviewers in employment agencies and paralegals.[3]

     - Another fact: Since the trough of the recession in November, 1982, there has been an increase of more than 15 million jobs, just about all of which took place on the service side. Jobs paying at least $10 an hour accounted for one half of that increase; those paying the minimum wage or less declined by about 25%.

     - The biggest increases granted under collective bargaining for 1987 as a whole and the first quarter of 1988 occurred in the Services industry. [4]

1. Hirschorn, L. "Skill Formation in the American Economy" U. of Penna. 1987
2. Ibid, p.10
3. Monthly Labor Review, Sept. 1987, p.58
4. Bureau of Labor Statistics Release 88-212., April 26, 1988, p.13

III. With some of the definitional and related matters now behind us, we turn to the substance of the employment developments for which we have a 40 year record of what happened, summarized and portrayed in Table 1/Chart 1.

1. In 1947, as the post World War II era took off, the relationship between the goods and service producing sectors was 51% to 49%, with the service side about 1 million below the good sector's employment total. Forty years later, the job total of the good's sector was up by about 1 1/2 million for about a 6 1/2% increase; the service sector upped its employment by about 52 million for a jump of 205%, accounting for nearly three-fourths of the total, and changing the industrial terrain of the USA forever.

2. Each of the major industry divisions in both the goods and service sectors has its own compelling story to tell about those four decades. The enormous decline in agriculture (-60%) marked by huge advances in technology on the farm is, of course, one of the hallmarks of this period. It accounts for just about all of the lack of real movement on the goods side. Only about three percent of the American work force now produces all of the food, feed, fiber consumed in this country, sent abroad or moved into storage. Construction, up two and one half times, 1947-87, and manufacturing up by more than one-fifth despite its more recent woes, testify to some of the long term growth among some components of the goods sector.

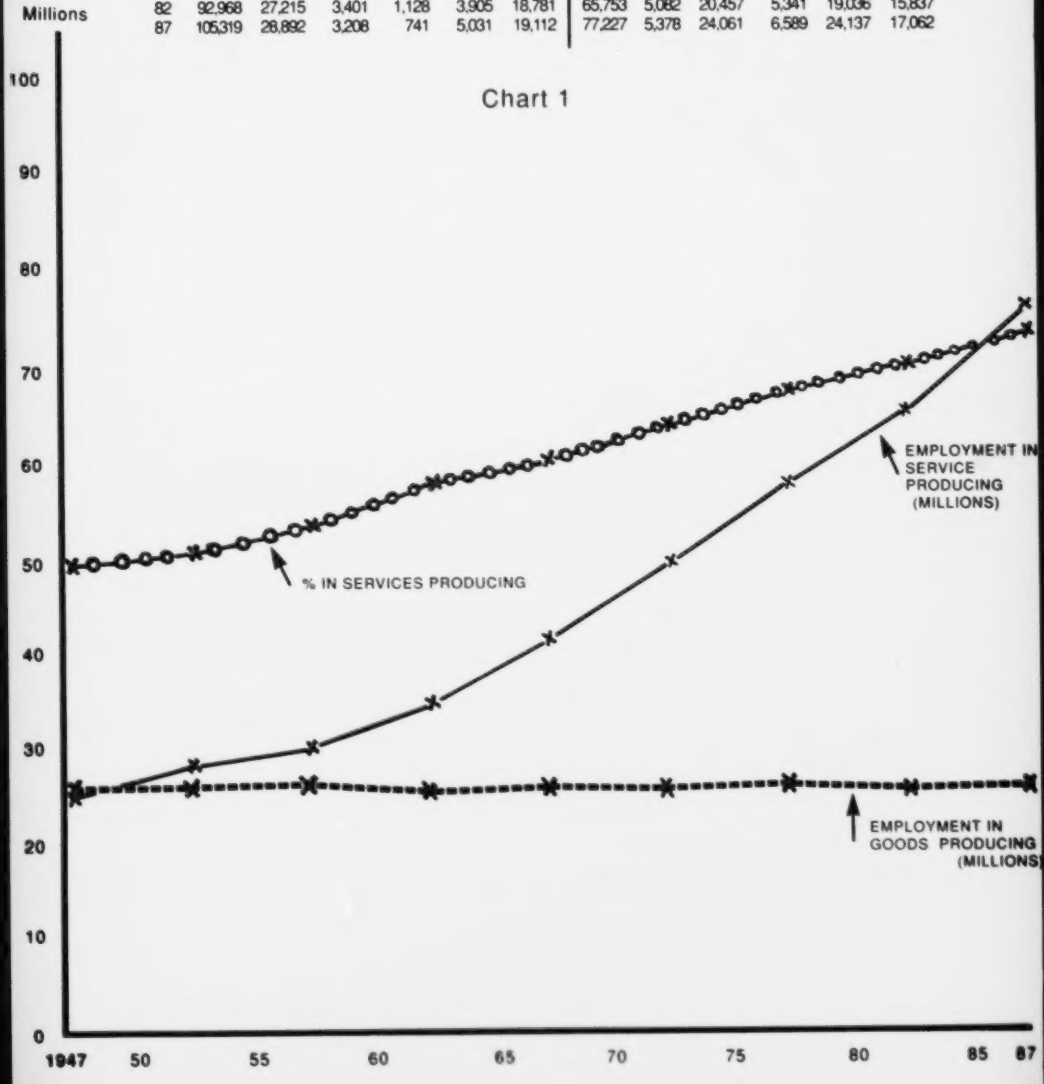
   On the service side the story, of course, is dominated by major upturns across the board: Quadrupling in the services industry; more than tripling in Government (mostly at the state and local levels) and finance, insurance and real estate; increasing more than two and one half times in trade; and even 30% higher in transportation and public utilities despite a very substantial decline among the railroads, counterbalanced by even bigger increases in trucking and the airlines. A more detailed examination of the makeup of some of these changes will be found in the next section.

TABLE 1

INDUSTRIAL BALANCE SHEET IN USA 1947-87 (000)

YEAR	TOTAL	GOODS PRODUCING					SERVICE PRODUCING					
		TOTAL	AGRIC	MINING	CONTSTR.	MFG..	TOTAL	Trans & Pub Ut	TRADE	Fin. Ins. & R. Estate	SERVICES	GOVT.
1947	51,748	26,400	7,891	955	2,009	15,545	25,348	4,166	8,966	1,800	5,181	5,235
52	55,084	26,489	6,261	898	2,668	16,632	28,595	4,248	10,004	2,075	5,699	6,609
57	58,800	26,911	5,947	828	2,962	17,174	31,889	4,241	10,886	2,438	6,708	7,616
62	60,498	25,400	4,949	650	2,948	16,853	35,098	3,906	11,566	2,754	7,982	8,889
67	69,467	27,152	3,844	613	3,248	19,447	42,495	4,268	13,606	3,185	10,045	11,392
72	77,159	27,152	3,484	628	3,889	19,151	50,007	4,541	15,949	3,908	12,276	13,333
77	85,754	27,629	3,283	813	3,851	19,682	58,125	4,713	18,516	4,467	15,303	15,129
82	92,968	27,215	3,401	1,128	3,905	18,781	65,753	5,082	20,457	5,341	19,036	15,837
87	105,319	28,892	3,208	741	5,031	19,112	77,227	5,378	24,061	6,589	24,137	17,062

Chart 1



3. Table 1/Chart 1 hints at, and a detailed year-by-year recording of the '47-87 period confirms, one of the critical features of the trends among the two sectors. While cyclical ups and downs highlighted the forty year history of the goods producing sector, the service side went right on increasing its payroll totals even during recessionary periods with practically no exceptions.

   - During the 40 year history being reviewed here, employment in the goods producing sector rose for 26 years and declined during 14 of them. In other words, in more than one-third (35%) of those years, employment actually fell in that sector.

   - On the service side employment rose during 39 of those years and fell only once, during the recession year of 1958, when it dipped marginally (by 78,000 on a base of almost 32 millions) because of a relatively large downturn in transportation. Even in that year, most of the major industry divisions in the service sector continued to raise their employment.

     - The continued demand for what the service sector provided was a major factor in mitigating the employment-unemployment effects of the recessionary periods in post World War II America.

4. The changing ranks of the major industry divisions over the years is also an important clue to developments in this story:

   - As background, for 150 years, from 1790 to 1940, Agriculture was the leading employer in the USA.

   - In 1940, Manufacturing took over the lead, particularly under the surging orders for factory goods for the military.

   - In 1980, manufacturing, after a 40 year reign as number one gave way to Trade.

     - It may be noted, therefore, that for most of our history, and indeed only up to the current decade, it was a major industry division in the goods side that led all the rest, not surprising perhaps with the overriding importance of farming since colonial times and our development into one of the prime industrial nations of the world in the more recent era.

   - That Trade - buying and selling, shopping malls and eating and drinking places, auto dealers (new and used), etc., should be the nation's biggest employer was seen as the inexorable entry into the post-industrial age, and after only a relatively brief reign, it was succeeded by the Services major industry division in 1987.

   - Services barely edged out Trade and both have remained very close with Services maintaining a slim lead through the middle of 1988. Together, they are accounting for nearly one out of every two (48%) of all the employees in the nonfarm sector of the USA.

5. Finally, this overall view of long term trends in industrial employment should also note the importance of those trends to practically every other parameter of the economic life of the country. It is the obvious answer to the question on where the jobs have been and are: 97% of the increase in employment 1947-87 took place on the service side, and the projections say that is about the way it is going to be, at least to the beginning of the next century.

   The concurrent impact on the occupational structure, where the white collar worker has become the majority occupational class, and where the single biggest occupational group is represented by the administrative and clerical support group is also evidence on this score.

   Further, these trends also have had a key impact on the composition and size of trade union membership which has been declining during the current decade. On that matter, it is true that the major strongholds of unions, e.g., mining and manufacturing have lost in the relative employment standings and are surely related to the declining proportion of the American workforce that is unionized; it is also true, moreover, that major components of the service producing sector have low rates of union membership, 2.3% in finance, insurance and real estate; 6.3% in the services industry; 7.1% in trade. Still, the biggest proportion of employees who are unionized is in government (36%) mostly at the state and local levels, and not far behind is the transportation and public utilities division at 33.5%, heavily in trucking, railroads, telephone industry and airlines. [5]

   And to go to a completely different arena, our international balance of payments, a favorite question asked is: In a country where 3 out of every 4 workers produce a service, what does such a country export?

IV. Taking a closer look at what has happened to employment specifically within the service producing sector and its constituent components yields substantial additional insight on what these changes have wrought, particularly in the way they have mirrored everything from our changing social mores to our changing public policies to our changing spending patterns. We do this by narrowing our time perspective to the more recent times by focusing on the 1982-87 span, but doing our examination in greater depth and with many more concrete examples and illustrations.

1. In Trade, for example, that major industry division upped its employment total by 20% between 1982 and 1987. However, radio and TV stores surged ahead with a 115% rise, followed by a 95% increase in lumber and building material outlets, courtesy of Harry the Homeowner and the do-it-yourself mode. There were also some declines: Liquor stores by 4% and specialty shops selling boy's and men's clothing off 11% as chains and other outlets took over. Higher than average employment gains were scored by a diverse group including book stores (+29%) a heartening development for some, and new and used car dealers (+32%) which may be the same to others.

5. Bureau of Labor Statistics, Employment and Earnings, Jan. 1988, p.223

- The biggest industry in the Trade division is called "Eating and Drinking Places". It makes up one third of the entire work force in the huge Trade field and accounted for almost 40% of the increase in Trade 1982-87. Reflected, of course, is the persistent increase in the proportion of the average family's food budget spent on eating out, a long, long way from the time when eating out was an "occasion".

2. In Finance, Insurance and Real Estate, a 23% increase, 1982-87, was a composite of more than double that rise (57%) among security brokers and dealers, and still going up despite the October, 1987, crash, and 49% upturn among real estate agents who have served a lively housing and commercial market at one end of the spectrum and a small 5% rise among the banks at the other.

3. In Transportation and Public Utilities, the changing pattern of moving around shows up very clearly. Up only 6% overall, it shows significant declines among the bigger railroads (-29%), water transportation (-17%), but big increases for the airlines (+34%), trucking (+21%), and local and suburban transportation (+23%). Indicative of advancing technology was the downturn of 17% in employment in the telephone communication industry.

4. Table 2 shows in more detail what has happened to the current leader, the Services industry division and some of the ripple effects of the course of events there. Some of the highlights are:

   a. It shows, in the first place, the extraordinary variety and diversity of the services being rendered by this one division. They range from colleges and universities to auto repair shops; psychiatric hospitals to lawyer's offices; amusement and recreation centers to funerals and crematoria; computer installations to beauty shops, etc.

   b. It emphasizes, too, what was touched upon briefly before, i.e., we are dealing here with service industries, not service occupations. About one half of the almost 50 individual industry groups listed in Table 2 are in such fields as accounting, engineering, law, education, health, research and development. These deploy significant proportions of managerial, professional, technical and allied personnel, many at relatively high compensation levels.

   c. In this connection, it is important to note the recent study of the National Science Foundation calling attention to the fact that the "increases in the number of S/E (Science and Engineering) jobs in nonmanufacturing industries, primarily the service-producing industries, outpaced that in manufacturing during much of the 1977-87 decade".

TABLE 2

EMPLOYMENT CHANGE IN THE SERVICES MAJOR INDUSTRIES DIVISION

1982-1987

INDUSTRY	%Change 82-87	INDUSTRY	%Change 82-87
TOTAL SERVICES MAJOR INDUSTRY DIVISION	**26.8%**		
Temporary Help Supply Services	135.5	Accounting, Auditing, Bookkeeping Services	28.4%
Computer Programming & Software	111.4	Skilled Nursing Care Facilities	28.3
Outpatient Health Care Facilities	67.7	Photographic Studios, Portraits	28.1
Equipment Renting and Leasing	65.1	Hotels and Other Lodging Places	27.6
Management & Public Relations	55.8	Advertising	25.0
Mailing, Reproduction & Stenogr Services	53.9	Offices of Dentists	25.0
Data Processing Services	50.6	Beauty Shops	23.4
Employment Agencies	48.4	Amusement & Recreation Services	23.4
Auto Rental	44.0	Engineering & Architectural Services	22.4
Psychiatric Hospitals	43.8	Electric Repair Shops	21.5
Residential Care Social Svc. Agencies	42.6	Colleges & Universities	21.0
Job Training Agencies	41.9	Other Specialty Hospitals	20.9
Museums, Botanical & Zoological Gardens	41.2	Noncommercial Research & Dev't Organizations	19.9
Correspondence & Vocational Schools	40.7	Laundry, Cleaning, Garment Services	16.7
Legal Services	40.1	Civic & Social Associations	16.5
Credit Reporting & Collection	39.6	Research & DevelopmentJobs	16.5
Individual & Family Social Services Agencies	37.6	Funeral Services, Crematories	10.5
Motion Picture Production & Services	36.3	Elementary & Secondary Schools	9.9
Service to Buildings	31.6	Photography Labs	8.3
Office of Physicians	30.2	Business Associations	8.3
Detective & Protective Services	29.4	General Medical & Surgical Hospitals	3.3
Auto Repair Shops	28.7	Labor Organizations	-9.2
Medical & Dental Labs	28.6	Motion Picture Theaters	-10.8

Source: U.S. Bureau of Labor Statistics

- The report goes on to note that this shift has increased the proportion of S/E jobs in nonmanufacturing from 37% to 45% and the "The major nonmanufacturing industries in terms of S/E jobs were architectural and engineering services, business services, financial services, and computer services; these together employed over three-fifths of nonmanufacturing S/E personnel"; that "There has been a phenomenal growth in S/E jobs in the computer and data processing services industry - an average of 18.7% per year over the 1977-87 period - in response to the revolution in information technologies and strong demand for information services...As a result of these various factors, S/E employment in the computer and data processing services industry has grown from 19,000 to an estimated 105,000 in 1987".

d. The same National Science Foundation report [6] also touches upon a major point about the growth of employment in general and of professional personnel in particular in the services industry division to which reference has been made earlier, i.e., does the service sector growth merely represent in large part the reduction in similar kinds of work by the goods producing sector?

- The Foundation puts it like this:

> "The major nonmanufacturing industries employing S/E personnel are producers of services to producing industries. The growth of these service industries and the S/E employment is primarily attributable to the development of new services, and not contracting out by producers of work formerly done in house. This is so because nonmanufacturing industries increased at an annual average rate of 4.7%, a substantial reversal from the declines in the 1967-77 period when it fell by about one percent a year".

c. It should also be noted that the increase shown in Table 2 for the various services industries, 1982-87, should be viewed in the context of a significantly expanding economy, taking off from the recession trough of November, 1982, to an unprecedented stretch of peacetime prosperity.

- At the same time it is equally important to note that the generally high levels of economic activity and employment did not mean that every sector gained during this period of time:

6. All quotes from the National Science Foundation are from its Science Resources Studies Highlights, Washington, D.C., March 31, 1988. NSF 88-304

Employment Change
1982-1987

All Nonagricultural Employees	14.0%
Mining	-34.3
Construction	28.8
Manufacturing	1.8
Transportation & Pub. Util.	5.8
Trade	17.6
Finance, Ins. & R. Estate	23.4
Services	26.8
Government	7.7

- Note the very wide range among the major industry divisions: From a full one third drop in mining as it moved from the days of the oil euphoria to the more recent darker OPEC times, to a big jump in construction which had an off year in 1982 and a much more active one in 1987. Services were right up there, too, as a continuation of a persistent, unbroken, long term trend. The job total in the Service industry increased in 1982's recession over what it was in 1981 and has continued on that path without really faltering since then.

g. The importance of disaggregating any overall figure is again well illustrated by Table 2 which demonstrated that even in the Services industry the employment changes have indeed been made over a very wide range, from a 135% increase to a decline of almost 11%. These changes reflect just about every force which impinges on the economy, including changing social mores to changing spending habits to changing social and economic legislation to changing technology. Just about every one of the individually listed industries exemplifies the point, including:

- Leading the parade is the temporary help industry whose enormous growth reflects the shifting supply/demand situation among the various groups in our population (Cf. our Monograph Number 1 in this series on "The New Labor Force") as well as changing temporary employment patterns in industry.

- Not surprisingly, one of the big stories is the big increase in the computer field, a hallmark of recent technological advance.

- The shifting scene in patterns of health delivery, illustrated by the almost stationary employment picture among general hospitals (+3.3%) and the large expansion in e.g., outpatient health care facilities such as group health associations, HMOs, drug clinics up by 68% between 1982 and 1987.

- We note without further comment the similar and big increase of about two-fifths in employment in psychiatric hospitals and law offices.

- And we note with some hope the good sized upturn among *museums, botanical gardens and zoos.*

- Table 2 is also replete with the business services mentioned by the National Science Foundation to which reference has been made: Advertising, engineering and architectural services, accounting, credit reporting, management, etc., all of which experienced increases of about one-fifth in payrolls over the 1982-87 span.

- Even in this arena there are some minuses, rare, but there: Among labor organizations, no doubt tied to the decline in union membership; and among motion picture theaters (VCRs?).

f. The increase in employment in the service producing sector in general and the Services industry division in particular coincided with the increases in labor market participation among the women, many of whom found a more accessible port of entry through these doors. As the summary tabulation below shows, the industry division with the highest proportion of women workers is the Services, and the top four are in the service producing sector. Of the 47 individual industries within the Services division, two-thirds had at least 50% of its workforce as women in 1987. In the fastest growing one in Table 2 (Temporary Help Services) that ratio was 72%; in the one with the biggest decline (motion picture theaters) it was 3.7%

% WOMEN /1987 [7]

TOTAL	44.8%
Services	61.1
Fin., Insurance & R. Estate	59.3
Trade	47.4
Government	41.4
Manufacturing	32.8
Transp. & Pub. Utilities	26.9
Agriculture	20.7
Mining	15.0
Construction	8.9

V. We end with a note on the future. In a previous section it was pointed out that every one of the occupations listed as the fastest growing between now and the year 2000 were predominantly in the service producing sector. Not surprisingly, a similar list of the 20 fastest growing specific industry groups are all in that sector as well. In fact, they are all in the Services industry division, most of them coinciding with the top performers in Table 2. More than incidentally, there is also a list of the fastest declining industries, and

7. Employment and Earnings, Jan. 1988, op. cit., pp. 191-194

nineteen of them are in the goods producing sector; one, railroad transportation, is on the service side. [8]

- It turns out that all of the net increase in employment, between now and the year 2000, is scheduled to take place on the service side, and fully half is projected to occur just in the Services industry division.

  - This is where the skills, hands and talents of the future are going to be needed, and as already emphasized, the majority are going to need what is provided in education beyond the high school.

    - We come full circle, therefore, in tying together the demographic, geographic and industrial future of the USA in the four monographs in this series for 1988. Basic to all of them are testing, counseling, educating, training, placement, and the continuous development of the nation's workforce.

8. Monthly Labor Review, Sept. 1987, p.35

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COMPUTER SYSTEMS & SOFTWARE

APTICOM: The self-timing and self-scoring dedicated microcomputer that assesses aptitudes, interests, and work-related language and math skills and which generates score and vocational recommendations reports tied to the U.S. Department of Labor's job matching system.
VRII (Vocational Research Interest Inventory): Apple and IBM compatible software that assess and report expressed interest in the U.S. Department of Labor's twelve interest areas.
Vocational Report Righter: Apple compatible software for the creation and printing of vocational assessment reports or employability development plans tied to the U.S. Department of Labor's job matching system.

PAPER & PENCIL

VRII (Vocational Research Interest Inventory)
IIIV (Inventario Investigativo de Interés Vocacional)
English and Spanish language alternate forms, written at a fourth grade reading level, that assess expressed interest in the U. S. Department of Labor's twelve interest areas.

PUBLICATIONS

Dictionary of Worker Traits: A two-volume reference, for use in person-job matching and determination of skill transferability, that details worker characteristic requirements of occupations in the U.S. economy.

WORK SAMPLE SYSTEMS

Vocational Information Evaluation Work Samples (VIEWS)
An integrated battery of sixteen work samples that evaluates the vocational potential of midly, moderately and severely retarded persons.
Vocational Interest, Temperament, Aptitude System (VITAS)
An integrated battery of twenty-two work samples that evaluates the potential of youth and adults with limited work experiences and records of underachievement.

An additional copy of the monograph
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Additional information can be obtained by calling
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Vocational Research Institute
1528 Walnut St. Suite 1502
Philadelphia, PA. 19102